Michigan Department of Natural Resources
Wildlife Division

2006 Ruffed Grouse Drumming Survey Preliminary Results*

Introduction

Like many wildlife species, ruffed grouse breed in the spring. During this time, males claim territories and try to attract females. During courtship displays, males raise the crests on the top of their heads, fluff the ruffs on the sides of their necks, and spread their fan-shaped tails. Males also create a well-known springtime "drumming" sound by rapidly beating their wings while standing on a stationary object, often a large log or rock. They begin by beating their wings slowly, creating a low thumping sound. As the wings build up speed, the drum-beat increases and sounds similar to a two-cycle engine starting. The sounds are created by the compression of air between the birds' bodies and their wings. This alerts nearby females to the presence of a male looking for a mate.

The Michigan Department of Natural Resources (DNR) Wildlife Division takes advantage of this spring ritual by traveling roadside routes and counting the number of drumming males heard. Routes are established in locations of known grouse populations. Each route has ten listening stations that are consistent from year to year. The number of ruffed grouse drumming males heard during a fixed time interval (four minutes) is recorded at each stop. Data are summarized as the number of drumming grouse heard per survey route. This survey provides the Wildlife Division a useful method for monitoring the ruffed grouse population.

Preliminary Grouse Drumming Results, 2006*

There were 96 grouse drumming routes that were completed in 2006. A statewide drumming survey was also conducted in 2005, which provided data from 97 routes. A paired t-test was performed using data from 86 routes run in both 2005 and 2006. The paired t-test indicated a significant change statewide in number of grouse heard between 2005 (8.8 drums heard per route) and 2006 (11.4 drums heard per route; $t=-3.1$; $P<0.05$).

Data analysis at the regional scale indicated that there was a significant increase in the number of drums heard in zone 1 (35 routes completed in both years; 7.5 drums heard per route in 2005 and 10.8 drums heard per route in 2006; $t=-2.0$; $P=0.05$) and zone 2 (43 routes completed in both years; 10.0 drums heard per route in 2005 and 12.2 drums heard per route in 2006; $t=-2.6$, $P=0.01$). Paired t-tests indicated no significant changes in zone 3 (8 routes completed in both years; 8.5 drums heard per route in 2005 and 9.4 drums heard per route in 2006; $t=-0.4$; $P=0.71$).

Ruffed grouse have ten-year cycles in abundance over much of Canada, Alaska, and the Great Lakes states of Wisconsin, Minnesota, and Michigan (Rusch et al. 1999). Based on recent trends, Michigan's population is expected to peak in 2010 (Figure 1). Many theories have been proposed to explain these cycles including diseases, sunspots, crowding, predators, genetic changes, and chance (Rusch 1989).

*The results will be final when the annual status report is published.

Literature Cited

Rusch, D.H. 1989. The grouse cycle. Pages 210-226 *in* S. Atwater and J. Schnell editors. Ruffed Grouse. Stackpole Books. Harrisburg, Pennsylvania, USA.

Rusch, D.H., J.R. Cary, and L.B. Keith. 1999. Pattern and process in ruffed grouse cycles. Midwest Fish and Wildlife Conference. 61:238.

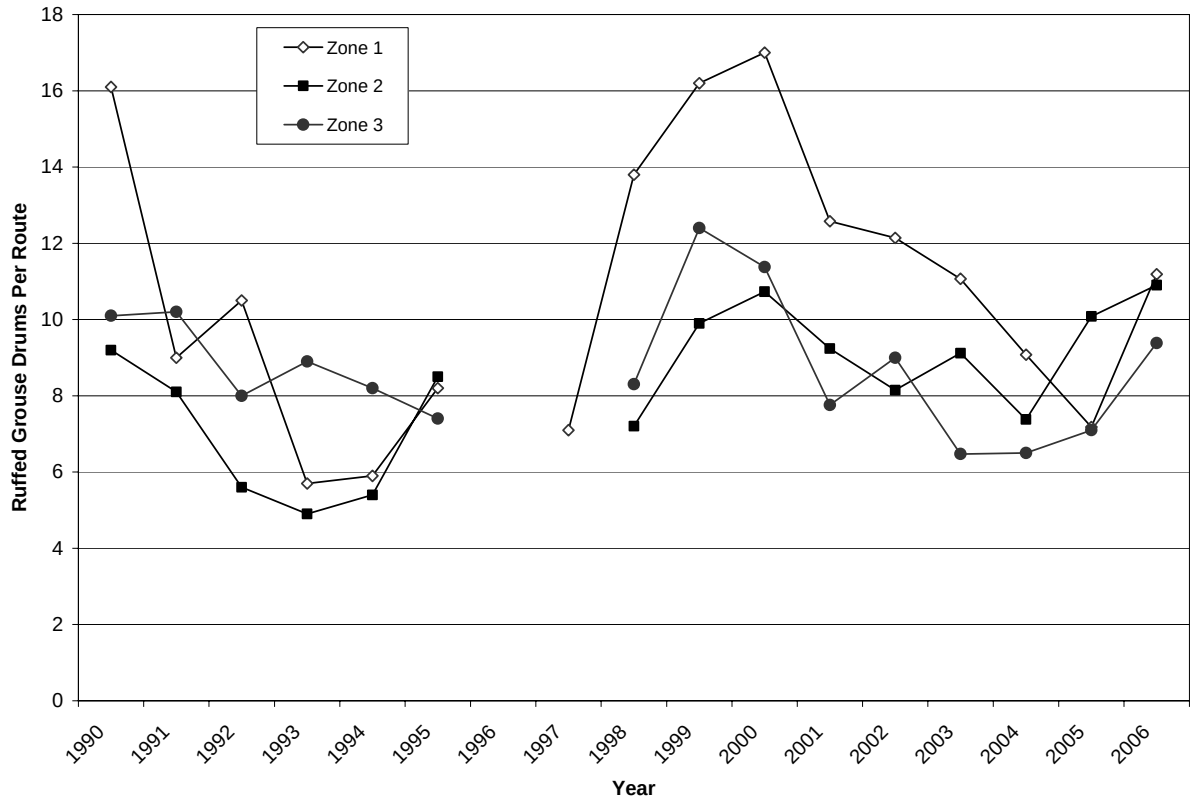

Figure 1. Ruffed grouse breeding population index (drums per route) in Michigan, 1990-2006. Drumming surveys were not conducted in 1996 and were conducted only in zone 1 in 1997.